

## PATENT APPLICATION

Docket No.: N.C. 79,764

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. ....09/862,418  
Filing Date .....05/23/2001  
Inventor..... Eddie L. Chang  
Assignee ..... Naval Research Laboratory  
Group Art Unit ..... 1755  
Examiner ..... Paterczyk, James W  
Attorney's Docket No. .... NC 79,764  
Title: IMMOBILIZED METAL CHELATE COMPLEXES FOR CATALYSIS AND DECONTAMINATION  
OF PESTICIDES AND CHEMICAL WARFARE NERVE AGENTS

DECLARATION UNDER 37 CFR 1.132

I, Eddie L. Chang, having been advised of the penalties for perjury, declare as follows:

1. I am a citizen and resident of the United States of America.
2. I was working in the capacity of research scientist for the Naval Research Laboratory, Washington, DC, the assignee of the above-identified application, at the time of the invention.
3. I am a co-inventor of the above-identified application, U.S. Application Serial No. 09/862,418 for "IMMOBILIZED METAL CHELATE COMPLEXES FOR CATALYSIS AND DECONTAMINATION OF PESTICIDES AND CHEMICAL WARFARE NERVE AGENTS", which names Alok Singh, Qin Lu, and Christopher Hartshorn as the other co-inventors.
4. I am the same person who is the co-author designated as "Eddie L. Chang" in Singh, *et al.*, "Incorporation of Nano-particle sites in polymer matrix by metal ion imprinting", Mat. Res. Soc. Symp. Proc. Vol. 501, p. 199-207, which lists Alok Singh, Dhananjay Puranik, Yan Guo, and Daniel Zabetakis as the co-authors.

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5. The Singh, *et al.* paper does not teach or disclose the invention claimed in the above-referenced application. The terms "pre-organized" and "self-organized" are terminologies used in different fields. "Pre-organized" refers to the "locking-in" of a particular molecular geometry for a ligand and is a concept common to ligand chemistry (see Martell, et al, Coord. Chem. Rev. 133, 39-65 (1994)) and to molecular imprinting chemistry. "Self-organized" structures refer to structures such a lipid molecules that will spontaneously form a lipid membrane that then folds into vesicles, tubes, and other large assemblies of the molecules; please refer to Singh, et al, Chemtech March, 38-43 1995, on which I am a co-author.
6. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application or any patent issuing thereon.

Date: July 5, 2005Signature: 

Eddie L. Chang

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4. One skilled in the art would not be motivated to combine the teachings of the references in Hlatky or Soga with the other references to arrive at the present invention. There can a

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difference in whether a metal ion is first added to the ligand before subsequent chemistry (such as functionalization and/or polymerization) is performed or if the ion were to be added after the formation of the polymer. In the former case, the addition of an ion will change the nucleophilicity of the amines in the ligand, making them less reactive than they normally would be. Therefore, there is no a priori reason to believe that chemical reactivities would be the same regardless of whether the ion is put in before or after polymerization. Each case has to be test and demonstrated.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application or any patent issuing thereon.

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